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in the under part to admit the flanch of the holder, and allow it free liberty of circular motion. The holder being laid on the slide *b*, the ring is dropped over it and is screwed down to the slide, as shewn fig. 1. The square hole in the holder through which the boring bar *dd* passes, is cut so low (as shewn in the section) that the boring bar, when passed through it, rests, not on the bottom of the hole, but on the upper surface of the ring, and therefore has a broader bearing than if it rested on the hole. The boring bar being brought to its proper position for the work, by turning the holder on its axis, is secured in its place by the strong screw *e*, which likewise prevents, at the same time, all motion in the holder.

The neck *c*, if preferred, may be left of its full width at top, and may have two screws to bind the tool the firmer.

No. III.

DOUBLE DRIVER FOR A LATHE.

The Thanks of the Society were presented to Mr. James Jones, of Well Street, Wellclose Square, for a Double Driver for a Lathe Chuck.

In the 47th vol. p. 131, is the description of a double driver invented by Mr. Clement; in which it is stated, that even in the best lathes it is impossible to turn a cylinder, or any other long article, perfectly true between the centres of the lathe. This arises from the circumstance that when the tool is applied, there being no counter-pressure in the opposite direction, the work recedes in some degree from the tool, forming a slight curve. The error is always the greatest at the end to which the driver is applied, because, being a single pin, it acts only on one end of the carrier, and thus tends to press that end to one side of the centre-pin, and to retain it in that position as long as the tool is acting on the work. The eccentricity which is produced by the partial action of the driver, may be avoided by the use of two drivers operating one at each end of the carrier. Mr. Clement's paper shews the contrivance adopted by that excellent artist for this purpose, and the present notice describes another and simpler method of effecting the same, which has been applied by Mr. James Jones with very satisfactory results.

In fig. 1, which is a side view, and fig. 2, which is a front view, *a* is the neck of the mandril, from which projects a solid screw, which entering the hollow screw of the chuck, *bb*, fastens them securely together, the chuck revolving in the same direction as the thread of the screw. *d* is the work suspended between the two centres of the lathe, of which *c* is one. On this end of the work is fixed the carrier, being an iron ring with two opposite arms, *ee*, one of which is perforated by a screw, in order to fasten the carrier immovably on the work. A short bar or pin, called the driver, screwed into the chuck, presses on one of the arms of the carrier, and thus communicates to the work the rotatory motion of the mandril. But in this arrangement, as the pressure is all on one side, its tendency must necessarily be to throw the axis of this end of the work out of the true axis of the lathe. If, however, the driver is furnished with two arms, each pressing equally against the respective arms of the carrier, it is obvious that this cause of eccentricity will be avoided. The double, or, more properly, two-armed driver, consists of a semicircular bar *g*, with an arm *ff* projecting from each end at right angles, and fastened to the chuck by the square-headed screws *hh* (shewn more clearly in fig. 3, which represents only the chuck and the driver). Hence it is evident, that when either of these arms comes against one of the arms of the carrier, it puts the latter in motion, and after half a turn the two arms of the carrier and of the driver are engaged respectively, each with each, and the work goes round, having an equal pressure on each arm of the carrier.

Figs. 4 and 5 shew another modification of the driver, being in the form of a circular or elliptical ring *g g*, with the arms *ff* forked, in order to receive between them the arms of the carrier.

Fig. 6 shews another very simple method of construction. The lower arm *f* is welded at right angles to the bar *i*, which is cylindrical, except at the end, where it is quadrangular. A hole is bored through the chuck *b*, just large enough to admit the bar; and the upper arm *f* having a square hole made through it at *j*, is slid on the squared end of the bar, and is finally secured by a nut.

Fig. 1.

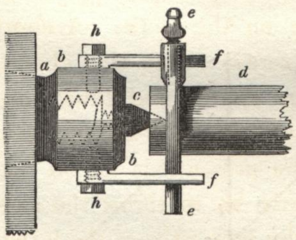


Fig. 2.

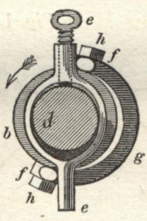
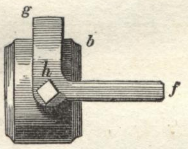


Fig. 3.



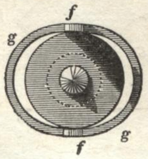


Fig. 4.

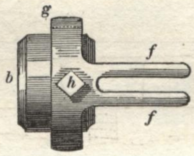


Fig. 5.

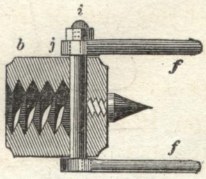


Fig. 6.